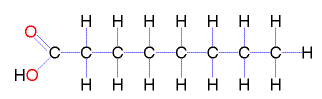
SBI4U - Biological Molecules – Review Worksheet

Part A: Mix and Match: Match the term on the right with the definition on the left. Each term can be used only once. Write the letter of the best answer in the box to the left of the definition.

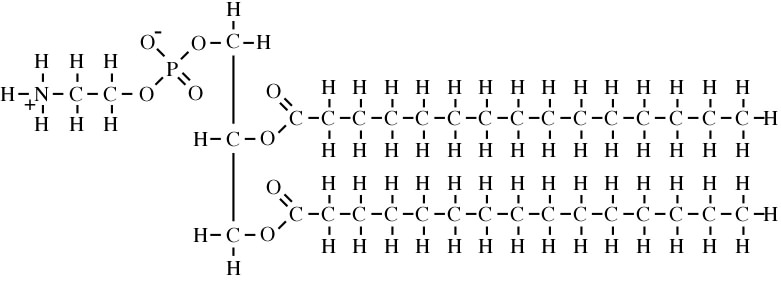
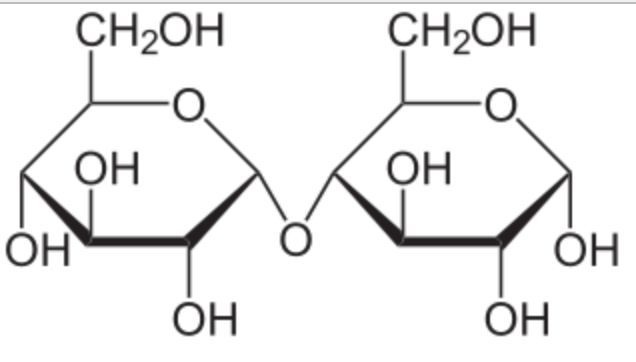
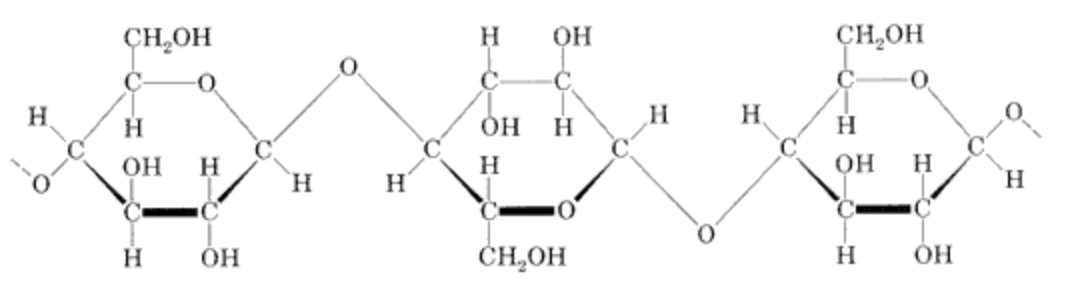
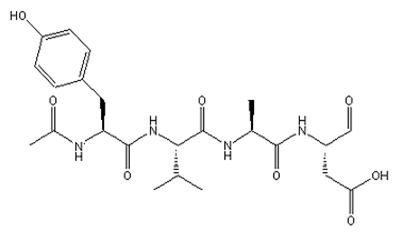
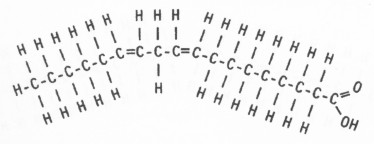
|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 1) | water-"loving" | A) | triglyceride |
|  | 2) | water-"fearing" | B) | amino acid |
|  | 3) | two or more polypeptide chains coming together and bonding with each other | C) | atom |
|  | 4) | to permanently change the 3 dimensional structure of a protein | D) | buffer |
|  | 5) | the monomer that makes up nucleic acids - 4 types in DNA are A C G T | E) | carbohydrate |
|  | 6) | the smallest unit of matter that cannot normally be broken into smaller particles | F) | cellulose |
|  | 7) | macromolecules that store genetic information (e.g. DNA and RNA) | G) | cholesterol |
|  | 8) | the loose association of amino acids in a polypeptide chain with each other, usually through H-bonds. e.g. alpha helix, beta pleated sheet | H) | dehydration synthesis |
|  | 9) | the linear sequence of amino acids in a protein, which ultimately determines its shape | I) | denature |
|  | 10) | the building block of proteins -- there are 20 different kinds normally found in nature | J) | monomer |
|  | 11) | the bond that forms between two amino acids joined by dehydration synthesis | K) | enzymes |
|  | 12) | the 3-D shape of a polypeptide chain due to it folding back on itself and forming bonds (third level of protein structure). | L) | glucose |
|  | 13) | molecules with identical empirical formulas but different structural arrangements of atoms (eg. C6H12O6 for both glucose and fructose) | M) | glycogen |
|  | 14) | a 6 carbon sugar that forms a 6-membered ring -- used as energy source by cells | N) | hydrogen bond |
|  | 15) | creating a bond between two atoms by taking OH from one atom and H from the other | O) | hydrolysis |
|  | 16) | breaking a bond between two atoms by adding OH to one atom and H to the other | P) | hydrophobic |
|  | 17) | biological catalysts, composed of protein, that speed up chemical reactions | Q) | hydrophilic |
|  | 18) | a chemical that resists changes in pH | R) | ion |
|  | 19) | any molecule with the molecular formula (CH2O)*n* | S) | isomers |
|  | 20) | an important component of cell membranes, has a hydrophilic head, hydrophobic tail | T) | unsaturated fatty acid |
|  | 21) | an enzyme that breaks down sucrose into glucose and fructose molecules | U) | lipids |
|  | 22) | an atom or molecule that has either lost or gained electrons | V) | phospholipid |
|  | 23) | a weak bond due to the attraction between partial charges on hydrogen, oxygen, and nitrogen atoms, produces cohesion between water molecules | W) | maltose |
|  | 24) | a polymer of glucose, used as a structural component of plant cell walls | X) | nucleic acids |
|  | 25) | a polymer of glucose, used as a storage form for glucose in animals | Y) | nucleotide |
|  | 26) | a polymer of glucose, used as a storage form for glucose in plants | Z) | tertiary structure |
|  | 27) | three carbon molecule that joins with fatty acids to produce triglycerides | AA) | peptide bond |
|  | 28) | a lipid that is an important component of cell membranes and from which steroid hormones are made | BB) | sucrase |
|  | 29) | a lipid composed of glycerol joined to 3 fatty acids | CC) | polymer |
|  | 30) | a large organic molecule formed from a chain or chains of amino acids | DD) | primary structure |
|  | 31) | a large molecule made by joining together smaller identical (or similar) molecules | EE) | protein |
|  | 32) | the smallest building block of a polymer | FF) | quarternary structure |
|  | 33) | a fatty acid whose carbons are all joined to the maximum number of hydrogens | GG) | starch |
|  | 34) | a fatty acid that has a "kink" in it due to a double bond between carbon atoms | HH) | saturated fatty acid |
|  | 35) | a disaccharide consisting of two glucose molecules | II) | secondary structure |
|  | 36) | a class of molecules that includes oils, fats and steroids | JJ) | glycerol |

# SBI4U BIOLOGICAL MOLECULES EXERCISE NAME:

Name each type of molecule. Circle & name each functional group and linkage. Be as specific as possible.



**B \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**



**H \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**E \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**D \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

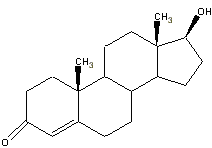
**F \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

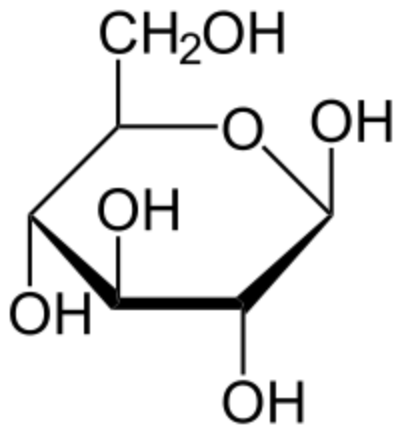
**C \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**



**G \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**







**K \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**J\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

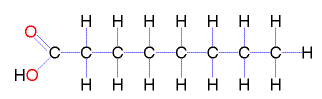
**I \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

SBI4U - Biological Molecules – Review Worksheet  *ANSWERS*

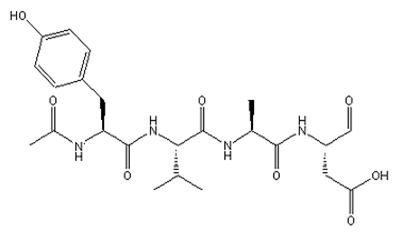
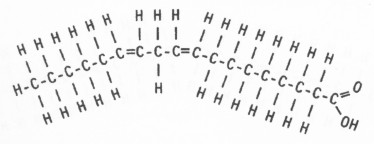
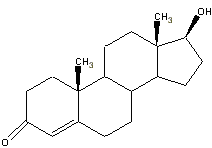
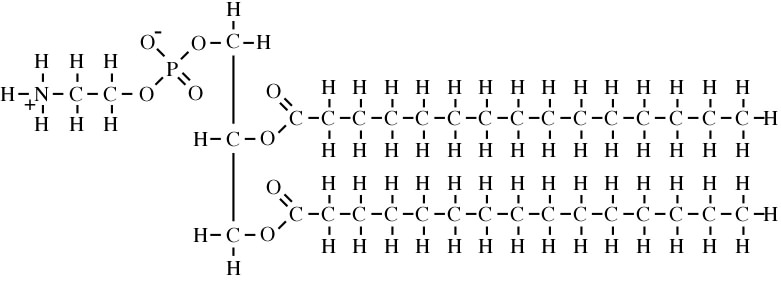
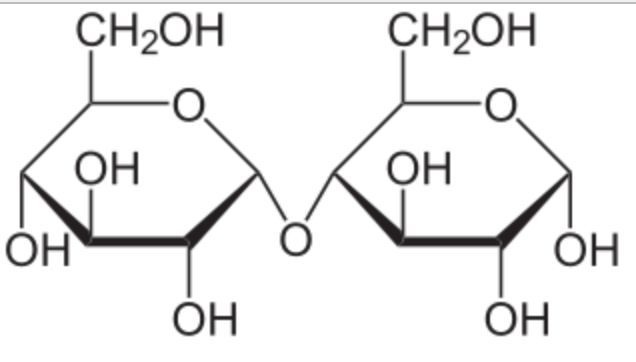
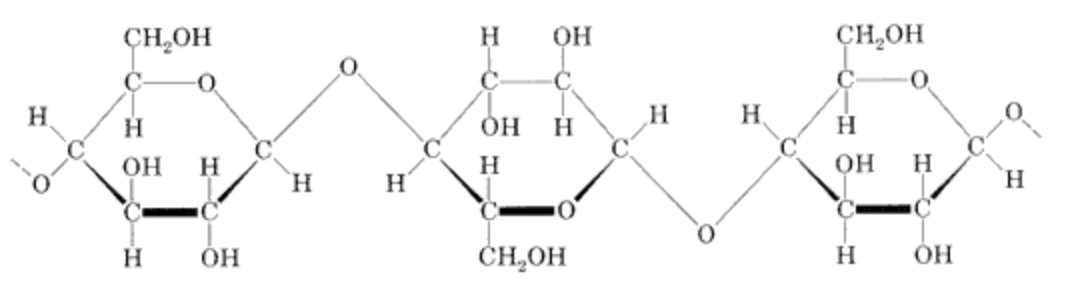
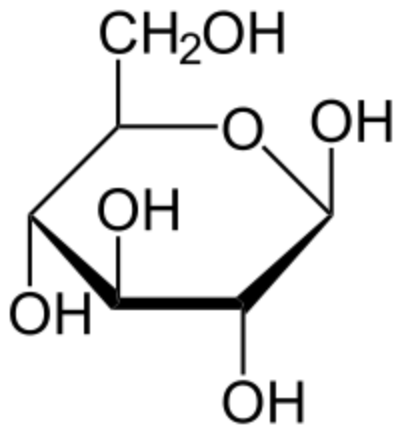
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# SBI4U BIOLOGICAL MOLECULES EXERCISE ANSWERS

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**I β glucose**

**J deoxy-nucleotide**

**E *cis*- polyunsaturated fatty acid**

**F cellulose (β1-4 linkages)**

**A amino acid**

**G phospholipid**

**C triglyceride**



**K steroid**

**H maltose**

**D polypeptide**

**B saturated fatty acid**